

TRANSFER OF TECHNOLOGY

REPORT

MADE BY THE

PERMANENT SUBCOMMITTEE ON
INVESTIGATIONS

OF THE

UNITED STATES SENATE



OCTOBER 5 (legislative day, SEPTEMBER 24), 1984 —Ordered to be printed

U S GOVERNMENT PRINTING OFFICE

51-010 O

WASHINGTON · 1984

COMMITTEE ON GOVERNMENTAL AFFAIRS

WILLIAM V ROTH, Jr., Delaware, *Chairman*

CHARLES H PERCY, Illinois

TED STEVENS, Alaska

CHARLES McC MATHIAS, Jr., Maryland

WILLIAM S COHEN, Maine

DAVID DURENBERGER, Minnesota

WARREN B RUDMAN, New Hampshire

JOHN C DANFORTH, Missouri

THAD COCHRAN, Mississippi

WILLIAM L ARMSTRONG, Colorado

THOMAS F EAGLETON, Missouri

LAWTON CHILES, Florida

SAM NUNN, Georgia

JOHN GLENN, Ohio

JIM SASSER, Tennessee

CARL LEVIN, Michigan

JEFF BINGAMAN, New Mexico

DAVID PRYOR, Arkansas

JOHN M DUNCAN, *Staff Director*

PERMANENT SUBCOMMITTEE ON INVESTIGATIONS

WILLIAM V ROTH, Jr., Delaware, *Chairman*

WARREN B RUDMAN, New Hampshire, *Vice Chairman*

CHARLES H PERCY, Illinois

CHARLES McC MATHIAS, Jr., Maryland

WILLIAM S COHEN, Maine

THAD COCHRAN, Mississippi

WILLIAM L ARMSTRONG, Colorado

SAM NUNN, Georgia

LAWTON CHILES, Florida

JOHN GLENN, Ohio

JEFF BINGAMAN, New Mexico

CARL LEVIN, Michigan

DAVID PRYOR, Arkansas

S CASS WEILAND, *Chief Counsel*

ELEANORE J HILL, *Chief Counsel to the Minority*

KATHERINE BIDDEN, *Chief Clerk*

CONTENTS

	Page
I INTRODUCTION	1
II ENFORCEMENT OF THE EXPORT ADMINISTRATION ACT	2
John Walker Of Treasury and William Archey Of Commerce Testi-	
fied About Need of Agencies To Cooperate	2
Report By Commerce Department Inspector General Revealed Unco-	
operative Attitude Between Agencies Persists	4
III DISPUTE CONTINUED OVER ORGANIZATION OF PENTAGON IN	
EXPORT CONTROL PROCESS	5
Pentagon Debate Was Quieted When Secretary Weinberger Assigned	
Final Say On Export Controls To Policy Office	5
Debate Persisted On Issue Of Whether International Security Policy	
Should Have Final Pentagon Say In Export Matters	6
VHSIC Program Reportedly Suffered Due To Overly Strict Export	
Controls Required By ISP Office	8
Former Cocom Negotiator William Root Cited 10(g) And Pentagon As	
Reasons For Leaving State Department	9
OECD Ambassador Katz Intervened In Paris In 11th-Hour Effort To	
Unify U S Cocom Position	11
Ambassador Katz Reported To Washington On Progress And Set-	
backs In American Negotiating Process To Cocom	11
Olmer , Schneider, Perle Said Most Problems That Existed At Decem-	
ber '83 Cocom Meeting Had Been Solved	12
Pentagon Displayed Small Computers To Show Their Use In Nuclear	
Target Exercises By U S Army In Europe	13
Differences Of Opinion Between Pentagon And Commerce Were Seen	
In Spirited Exchange Between Olmer And Perle	13
Senator Nunn, Assistant Secretary Perle Discussed Concerns That	
DOD Technical Judgments Will Be Submerged By Ideology	15
Two Scientists Pointed To Weaknesses In Ability Of U S To Achieve	
Effective Export Controls	17
IV VIEW FROM TECHNOLOGY EXPORTING COMMUNITY	19
Industry Coalition Urged Improved Foreign Availability Determina-	
tions, Increased Export Control Role By Business	19
V FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	21
Summary	21
Introduction	21
1 Improved Intelligence On Soviet Goals Can Assist U S In Deter-	
mining Extent of Export Controls	22
2 National Security Council Can Mediate Disputes By Assuming	
Assertive Role In Export Controls	24
3 DOD Should Utilize Existing Technical Expertise	26
4 The Department Of Defense Should Insure That Its Technical	
Assessments on Export Control Questions Are Sound And Read-	
ily Discernible From Less Tangible Questions Involving Political	
And Ideological Judgments	27
5 The State Department Should Oversee Export Control Negotia-	
tions Between The United States And Foreign Nations	28
6 The Views Of Private Industry, Which Develops Most Of The	
Militarily Useful High Technology, Should Continue To Be	
Heard And Accorded Appropriate Consideration As Export Con-	
trol Policies Are Developed	28
7 Commerce, Customs "Turf" Battles Continue, Customs Should	
Have Total Enforcement Duty	29
Additional Views of Chairman Roth and Vice Chairman Rudman	32

TRANSFER OF TECHNOLOGY

OCTOBER 5 (legislative day, SEPTEMBER 24), 1984 —Ordered to be printed

Mr. ROTH, from the Committee on Governmental Affairs,
submitted the following

REPORT

I. INTRODUCTION

The Senate Permanent Subcommittee on Investigations held hearings on the issue of technology transfer and export controls on April 2, 3, 11 and 12, 1984. The hearings were based on an investigation by the subcommittee's minority staff under the direction of Senator Sam Nunn of Georgia, the Ranking Minority Member, and with the concurrence of Senator William V. Roth, Jr., of Delaware, the Chairman.

The investigations subcommittee, which held hearings on export controls affecting the Communist world as early as 1956, has had a continuing interest in this subject. In May of 1982, for example, 5 days of hearings were held to evaluate the ability of the executive branch to enforce export controls, particularly regarding the transfer of high technology to the Soviet Union and Soviet Bloc.

The 1982 hearings, followed by a report issued in November of that year, described the legal and illegal methods the Soviets use to obtain Western high technology and cited organizational and operational shortcomings in various executive branch agencies regarding export controls. The intelligence community and the Defense Department were found to have committed insufficient resources to technology transfer problems. It was found that the Commerce Department, which has responsibility for enforcement of export controls on militarily useful civilian technology, was not carrying out this duty effectively. In addition, it was revealed that the Customs Service, which also has responsibilities in the enforcement of export controls, and the Commerce Department were not cooperating. In testimony before the subcommittee, witnesses from both agencies agreed that improvements were needed and assured Senators that the necessary reforms would be carried out.

In its findings from the 1982 inquiry, the subcommittee advocated changes in many aspects of the American export control system. The main recommendation was for the Government to control fewer items—but control them more effectively. A top priority, the subcommittee said, should be improved intelligence about the Soviet Union's technological needs so that the United States can have a better understanding of what the Soviets want most. "With improved intelligence," the subcommittee said, "the Government must determine what it is the Soviets want and then model its response accordingly." By targeting its enforcement efforts on those technologies and goods the Soviets must have, the U.S. can reduce significantly the number of technologies and goods it seeks to control. Only then will the problem of enforcement become manageable. The current system, the subcommittee found, tries to control too much—and, because it tries to do too much, Government ends up controlling too little. The subcommittee took no position on the minority staff's recommendation that enforcement of the Export Administration Act be transferred from the Commerce Department to the Customs Service. However, shortly after the hearings, Senators Nunn and Chiles introduced legislation to transfer enforcement to Customs. The proposal was incorporated into the Senate version of legislation to renew the Export Administration Act.

The enforcement question was one of three principal issues examined by the subcommittee in the April 1984 hearings. The subcommittee wanted to know the extent of cooperation between Customs and Commerce agents, especially the extent to which the two agencies shared pertinent investigative information.

The second principal issue examined in the 1984 hearings was the ability of the Departments of State, Commerce, and Defense to work together under the terms of the Export Administration Act in drafting and carrying out United States policy in international negotiations wherein America's NATO allies and Japan set controls on high technology exports to the Soviet Union, and other Communist nations.

The third issue was the general subject of high technology itself, its position of importance in the Nation's economy, trade and military competence.

The hearings were held under authority of Senate Resolution 354 of March 2, 1984, in which the Permanent Subcommittee on Investigations of the Governmental Affairs Committee was authorized to examine the efficiency and economy of all government operations, including those functions affecting national security.

In 4 days of hearings, 13 witnesses testified in 428 pages of stenographic testimony in connection with 20 exhibits.

II. ENFORCEMENT OF THE EXPORT ADMINISTRATION ACT

John Walker of Treasury and William Archey of Commerce Testified About Need of Agencies to Cooperate

One of the findings of the subcommittee's 1982 hearings was that the Commerce Department was enforcing the Export Administration Act ineffectively. A related finding was that the U.S. Customs Service, which also has enforcement responsibilities in export con-

trols, and the Commerce Department were not cooperating. In the 1984 hearings, the subcommittee wanted to know what improvements had been made in the Commerce Department's enforcement activities and if better cooperation between Commerce and Customs had been achieved.

As Acting Assistant Secretary of Commerce for Trade Administration, William T. Archey has responsibility for the Department's enforcement of the Export Administration Act. Reporting to Archey and managing enforcement operations is Theodore W. Wu, Deputy Assistant Secretary in charge of the Office of Export Enforcement (OEE).

Archey, accompanied by Wu, testified that his Department had increased the number of agents from the 1982 complement of about 8 to more than 45. Intelligence analysts numbered about 20, up from 1 or 3, and there were about 30 other employees in OEE. New field offices were opened in Los Angeles and San Francisco. One OEE investigator was working in the American embassy in Stockholm. Another was assigned to the embassy in Vienna.

The Commerce Department, Archey said, was awaiting Congressional approval to open 6 new field offices which, when fully staffed, would give OEE a total of 99 agents, 24 intelligence analysts and 49 support personnel.

The Commerce Department, which had an enforcement budget of \$1.8 million in 1981, was spending \$3.6 million in 1984 on this pursuit, Archey said, adding that all his agents were now well trained and met minimum standards for experience and training required of all Federal investigators. In the Intelligence Division of OEE, analysts now received reports from other information-gathering components of the Government and utilized a new automated data system keyed to the Department's licensing section. Archey said his Department had entered into joint cooperation agreements with the Federal Bureau of Investigation, the Defense Intelligence Agency, the Central Intelligence Agency and the Customs Service and that a similar agreement was about to be signed with the National Security Agency. The result of the additional resources and the new working arrangements with other agencies was a dramatic increase in criminal cases and administrative actions and more effective enforcement operations in general. The Department also stepped up its efforts to educate the American business community on export control.

Archey said he believed the Commerce Department and the Customs Service can and should work together and that both agencies bring "complementary strengths" to the task. A January 16, 1984 memorandum of understanding between Customs and Commerce had brought about improved cooperation, particularly in overseas investigations, Archey said.

John M. Walker, Jr., Assistant Secretary of the Treasury for Enforcement and Operations and the senior Department official with oversight of the Customs Service, testified that he had directed that Customs personnel "give their full cooperation to Commerce at every opportunity." Sharp differences over policies and procedures between Commerce and Customs—disputes that had weakened enforcement efforts in the past and which had been cited in

the subcommittee's 1982 hearing—were being reconciled now, said Walker, who went on to say:

* * * Customs intends to continue its policy of consultation with Commerce on every (Export Administration Act) investigation and every arms export case in which Commerce has an interest. Customs honors all requests from Commerce for investigative information. * * *

Report By Commerce Department Inspector General Revealed Uncooperative Attitude Between Agencies Persists

A report of investigation prepared by the Commerce Department's Office of Inspector General in September of 1983 indicated that cooperation between Commerce and Customs was still lacking. Citing information developed in the Commerce Department's San Francisco field office, the IG report said there were also several positive findings reached. Agents were highly qualified and well motivated. Timely, thorough and substantive investigative reports were being written. Viable law enforcement training and equipment were being given to agents. Good working relationships existed between team leaders and agents. Senator Nunn, whose Minority staff had criticized the Commerce Department for its investigative shortcomings in the 1982 hearings, now called attention to these positive findings from the IG report as evidence that Archey, Deputy Assistant Secretary Theodore Wu and other Department officers had carried out need improvements. The progress they had made "is something you ought to be commended for," Senator Nunn said.

However, also noted in the IG report was the reputed continuing inability, or unwillingness, of Customs and Commerce executives and agents to work in close harmony on export control cases. The IG report said there was no justification for both Customs and Commerce to enforce export controls and that one agency properly supported could handle the assignment alone. The IG report said:

One agency could do the job just as well or better than two given the necessary manpower, authority and resources. After witnessing the increasing strained relations between Customs and OEE agents working in control cases, this conclusion is even more apparent

Archey said he disagreed "100 percent" with his Department's IG report on that finding and pointed out that the new close relationship between Commerce's licensing section and OEE greatly enhanced enforcement operations. The licensing function must have an enforcement arm, Archey said.

Disagreeing with Archey, Assistant Treasury Secretary Walker said that it was his personal opinion that the export control system could work efficiently if Commerce continued to manage licensing and Customs had sole responsibility for enforcement. Walker made clear that President Reagan had decided in favor of having both Customs and Commerce enforce export controls and that Customs intended to carry out the President's policy. But, asked by Senator Nunn to give his own view, Walker added:

I feel Mr. Archey's arguments in favor of dual-agency responsibility here are probably exaggerated a bit. I can see that a reasonable decision might be that it could be done by a single agency, and I can see a reasonable approach being that it could be done by Customs.

Following the 1982 hearings, Senator Nunn introduced a bill to transfer enforcement of the Export Administration Act from Commerce to Customs. The Nunn measure, cosponsored by Senator Lawton Chiles of Florida, was incorporated into S. 979, the Senate version of legislation to renew the Export Administration Act which, at this writing, was in conference. The House version of the renewing legislation retains the enforcement function in the Commerce Department.

Regarding the IG report's assertion that Commerce-Customs cooperation continues to be inadequate, Acting Assistant Commerce Secretary Archey said he had taken steps to improve cooperation since the IG report came out. Archey, who before joining Commerce had been an Assistant Commissioner of Customs, said he was installing a new chief in the San Francisco office. Moreover, he had personally instructed all his field office directors to make cooperation with Customs a top priority.

III. DISPUTE CONTINUED OVER ORGANIZATION OF PENTAGON IN EXPORT CONTROL PROCESS

Pentagon Debate Was Quieted When Secretary Weinberger Assigned Final Say on Export Controls to Policy Office

Two components of the Department of Defense play key roles in shaping Pentagon policy in the export of militarily useful high technology. Technical expertise is provided by the Office of Defense Research and Engineering (DRE). Judgments which go beyond the technical dimension into other aspects of national security are given by the Office of International Security Policy (ISP).

Debate went on within the Defense Department as these two offices—DRE and ISP—vied for authority in export control matters. Quoting from internal memoranda and other documents that an unidentified Defense Department official had provided, the December 19, 1983 issue of "Aviation Week & Space Technology" reported that ISP Assistant Secretary Richard N. Perle was trying to gain primary authority over the Pentagon's technology transfer policy and export control system despite objection by DRE Under Secretary Richard D. DeLauer, who wished to maintain the authority in his office.

According to "Aviation Week", the dispute grew from contrasting views on the level of militarily useful technology that should be available for export. ISP Assistant Secretary Perle wanted stricter restrictions on high technology exports while DRE Under Secretary DeLauer was more sympathetic to industry's desire for less restrictive controls.

Chairman Roth and Senator Nunn requested that the Defense Department turn over copies of the documents that had been leaked to the magazine. The Department refused, saying the documents were internal working memoranda whose disclosure would

be "inappropriate." In his testimony before the subcommittee, Dr. DeLauer acknowledged the general accuracy of the "Aviation Week" article.

In testimony before the subcommittee, DeLauer said that overly strict rules on the export of high technology can hurt the United States's own military prowess. Broad controls discourage private industry from investing in new technologies. They prevent members of the NATO alliance from exchanging valuable information, the result of which may be that new technologies never get developed, DeLauer said, explaining:

To lock it (technology) away for the purposes of protecting it, I think, is counterproductive. It will slowly disappear. When you open the safe some years later, you will find it is no longer there, it is dust, and as a consequence you kept it from being utilized in the most optimum fashion.

An overly strict policy on technology controls, DeLauer said, would cause other high technology exporting nations such as the NATO allies and Japan to find the export rules unrealistic and doubt the wisdom of further cooperation with American authorities in setting trade rules. Such rules are set in Paris by an organization known as Cocom, the Coordinating Committee of Japan and the NATO allies, except Iceland and Spain, which seeks to control trade in strategic goods to Communist countries.

During the course of the hearing, Senator Nunn asked DeLauer to comment on the contents of the "Aviation Week" article:

Senator NUNN. The article states that in a December 13, 1983 memo to Richard Perle, you suggested that Mr. Perle and his subordinates circumvented Deputy Secretary W. Paul Thayer in their efforts to make 2040 an official DOD policy. You also suggested they were taking unilateral and uncoordinated actions detrimental to DOD interests and ignoring Research and Engineering expertise in technology views at that time?

Dr. DELAUER. Yes, sir; that is why we changed.

DeLauer testified that his debate with Perle was settled by Caspar W. Weinberger, the Secretary of Defense, when in January of 1984 he issued directive No. 2040.2. That directive gives final DOD say on technology transfer issues to Perle's Office of International Security Policy.

Debate Persisted On Issue Of Whether International Security Policy Should Have Final Pentagon Say In Export Matters

While Secretary Weinberger's directive No. 2040.2 gave final say to the Office of International Security Policy in export control matters at the Pentagon, controversy still surrounded the decision. First, neither Perle nor Dr. DeLauer seemed to share the same interpretation of the directive. Second, there are serious questions—as reflected in the remarks of Senator Nunn—about the wisdom of assigning to a non-technical office the responsibility for making essentially technical judgments.

Regarding their interpretations of directive No. 2040.2, Dr. DeLauer seemed to believe his Office of Defense Research and Engineering shared responsibility equally with International Security Policy on export controls. Asked which office—DRE or ISP—would now be “responsible for assessing and giving the Secretary of Defense the assessment on how this kind of transfer could affect our security, Dr. DeLauer said, “Both of us,” meaning his office and Perle’s. Asked if it were now “a dual function,” Dr. DeLauer replied that in addition to DRE and ISP the individual military services would also share in the responsibility.

However, Perle disputed Dr. DeLauer’s interpretation. Senator Nunn asked him, “So is your shop and Dr. DeLauer’s shop on equal terms here?”

Perle replied, “No, I think I would have to say that the Office of the Under Secretary of Defense for Policy has the final decision, which of course is always subject to appeal to the Secretary of Defense.”

Senator Rudman said, “It is a brilliant compromise. They both think that they are in charge.”

Senator Nunn said, “That is great for diplomatic purposes, but I am not sure it is going to work.”

Perle said he did not think there was any question that directive 2040.2 makes clear that “it is the Policy (ISP) side that speaks for the Department of Defense” on export control issues.

Senator Nunn said he had doubts about the wisdom of turning final authority over to ISP. From both a government operations point of view and from the vantage of the Pentagon’s obligation to carry out the intent of Congress, directive 2040.2 raised questions, he said, explaining:

* * * the key to (the) hearing is that the reason Congress, as I remember the legislative debate, wanted Defense to play such an important role in this area was because Defense was looked on as having the technical expertise. We were looking for the technical judgment, not ideological or political views. We felt that those views, while legitimate, would primarily come from the State Department and the economic views from the Commerce Department. But, in effect, when we involved Defense in such a big way—and I remember Senator Jackson’s amendment on it, and I in fact voted for that amendment—our intent was to get these decisions not only from pure economic and political and ideological view but also from the technical experts. * * * We wanted a technical judgment on how it affected our security out of the Defense Department.

The amendment Senator Nunn referred to was a measure sponsored by the late Senator Henry M. Jackson of Washington which required the President to report to Congress whenever he overruled the Defense Department on an export issue. The provision was incorporated into the Export Administration Act of 1979 in a section known as 10(g).

VHSIC Program Reportedly Suffered Due to Overly Strict Export Controls Required By ISP Office

According to the "Aviation Week" article cited above, Under Secretary of Defense Richard D. DeLauer reportedly criticized Secretary Perle's Office of International Security Policy for dictating release guidelines for the Very High Speed Integrated Circuits (VHSIC) program "even though the VHSIC office of primary responsibility is research and engineering."¹ Lawrence Sumney, who had been in charge of the VHSIC program until April of 1982 when he left the Office of Defense Research and Engineering to take a position in private industry, testified that the VHSIC project would have been brought to a "grinding halt" had the Government imposed "overzealous classifications" on it.

Sumney had doubts about the wisdom of giving the ISP Office the dominant role in the Pentagon's export control system because, he said, ISP personnel were not trained to make technical judgments. He said ISP officials—

* * * tend to come from the fields of international affairs, foreign affairs, economics and law. They are in no position to assess the technology or the effects of their suggestions on the work of technologists, manufacturers and the technical community. They argue from an ideology.

Sumney noted that the section of the Export Administration Act known as 10(g) placed great authority in the Pentagon. Sumney, as well as other critics of 10(g), have said the provision gives ISP a veto because the Departments of State and Commerce are not willing to take an export question to the White House, thereby forcing the President to justify publicly his decision to overrule the Pentagon. Many observers feel no President will want to engage in a public discussion of conflicts within his own administration.

When Senator Nunn questioned Assistant Secretary Perle on Sumney's statement, Perle said:

I don't know the gentleman. In my time in the Defense Department I never encountered him. I think that (what Sumney said was) rubbish. What company did you say he was with, Senator Nunn?

Perle went on to say:

I believe he is involved in the industry and he is complaining about the extent of the controls. If he had been at all specific about the controls he has in mind, I could comment more usefully.

¹ According to DMS Market Intelligence Report for 1984, the VHSIC program is a tri-service effort to develop two generations of integrated circuits with very high data processing capacity for a wide range of military systems, including digital signal processors for radar, ASW, communications, missile guidance, electronic warfare and optical sensor systems. VHSIC is expected to enhance the performance and reliability of the systems and reduce the overall cost of the systems. Funding for VHSIC in fiscal year 1984 is \$125.1 million.

Former Cocom Negotiator William Root Cited 10(g) and Pentagon
As Reasons for Leaving State Department

Section 10(g) of the Export Administration Act, criticized by former VHSIC program director Lawrence Sumney, was also cited in the testimony of William A. Root, chief of the American negotiating team to Cocom until his retirement in September of 1983. Pointing out that he left the State Department to protest U.S. policy on the computer negotiations at Cocom, Root said Defense Department recalcitrance had made it impossible for him to return to Paris in the fall of 1983 with a presentable computer proposal. It was, he said, a combination of 10(g) and "rigid adherence" to an unrealistic negotiating position by the Pentagon that forced a delay of at least 1 year in Cocom's ability to approve a new computer position. Directing his criticism at the DOD Office of International Security Policy, Root said 10(g) enabled the Pentagon, specifically the ISP Office, to push through its own views on export controls without due regard for the differing positions of the Departments of State and Commerce.

Root said, however, that DOD should be the principal advisor to Commerce and State on export controls on militarily critical technology, as he explained:

This is essential. Defense is the only agency that can, with the adequate staff resources, advise on what is militarily critical.

But, he went on to say:

The disadvantage of 10(g) is the impediment which it presents to the evolution of a coordinated U.S. position.

One of the controversial issues in the Cocom negotiations had to do with low performance computers such as personal computers like the Apple II. Acknowledging that such computers have military significance and that the Soviets have difficulty producing them, Root said it is nonetheless unrealistic to ask the Cocom partners to join the U.S. in trying to control their export. He said.

* * * for credibility, it (the low performance computer) must be decontrolled in this area because there is nothing we can do about it. They are available in scores of countries in thousands of outlets. There is no way we can stop the flow of computers that are available in such profusion from so many places.

Root said the Defense Department continued to insist on controls on low performance computers. There was no desire on the part of the politically appointed officials at the Commerce and State Departments to ask the White House to step in and counter the Pentagon's demands because to do so might have triggered the 10(g) mechanism wherein a President who overrules DOD on an export matter must make an accounting of his conduct to the Congress. Root said that as a result the Pentagon's views prevailed. He said he understood DOD's wish to have stricter controls on high technology, even in personal computers. But, he said, 10(g) made the appeal process potentially embarrassing to the President. The result is that 10(g) is never invoked and DOD's view is never over-

turned. Root said the existence of 10(g) allowed the ISP Office in the Pentagon to have its way on export controls, a circumstance that led him to retire in protest. He noted, however, that the ISP's position has brought about less, rather than more, control of strategic exports. "Our allies are willing to cooperate," he said, "but they will not follow us blindly."

Root emphasized his view that the U.S. is not the original supplier of much of the high technology in the world today. Therefore, he said, the U.S. must strive to be more accommodating to the opinions of the Cocom trading partners.

Root maintained that the most outspoken advocates of tougher controls on computer exports to the Soviet Union were themselves "doing the most to weaken them." Root said these advocates, assigned to the Office of International Security Policy in the Pentagon under Assistant Secretary Richard N. Perle, had caused at least a year's delay in the imposition of stronger controls.

Root recounted that the U.S. had been trying since 1978 to revise the computer definition at Cocom. In 1978, there was general agreement in this government and among the Cocom partners that the two-year-old 1976 computer definition was already obsolete and needed to be strengthened. But the Soviet invasion of Afghanistan in 1980 led to a hardening of the U.S. position. Perceived by the Cocom members as being political rather than strategic, the new American stance of 1980 was unacceptable to Cocom and led to a breaking off of negotiations on computers, Root said. He said computer negotiations were resumed in the summer of 1982, with the U.S. position being heavily influenced by the Pentagon's ISP Office. That position was rejected by other Cocom members. In the summer of 1983, negotiations resumed again, this time with the U.S. offering a proposal less rigid and more likely to being accepted by the Cocom members. ". . . the gap was once again being narrowed," Root said, pointing out that the allies and the U.S. were moving toward agreement. However, he recalled, in the late summer and fall of 1983 the ISP Office in the Pentagon "decided to adhere" once again to the strict position of the immediate post-Afghanistan period in 1980 and that of 1982. This position had little chance of being accepted. "* * * the rigidity of the Defense position in 1983 will have cost a year's delay in putting into effect needed stronger controls on computer exports," Root said.

Root left the government in September of 1983. Serious problems still confronted U.S. efforts to achieve a new computer definition at Cocom. A computer negotiating session was scheduled for October of 1983 but agreement was not reached. High level policy talks were set for December of 1983. Representing the U.S. were to be senior officers at the Deputy Assistant Secretary level. However, in Paris, hours before the talks were to begin, senior U.S. Officials engaged in such strong disagreement among themselves over what the American negotiating position should be that higher authority in Washington had to be called upon to settle the dispute.

OECD Ambassador Katz Intervened In Paris In 11th-Hour Effort To Unify U.S. Cocom Position

The Organization for Economic Cooperation and Development (OECD) is composed of 24 industrial nations. With offices of OECD headquarters in Paris, the American Ambassador to the Organization has responsibility for continuing oversight of the U.S. presence at Cocom. In December of 1983, on the eve of a high level Cocom meeting convened to address the computer issue, the U.S. negotiating team in Paris was without an agreed-upon U.S. Cocom position on computers due to a last minute objection from Washington by the Department of Defense. Faced with the possibility that the U.S. could not propose a unified position, Abraham Katz, the American Ambassador to OECD, intervened. Through a series of trans-Atlantic phone calls in the early morning hours, a compromise was worked out between the Departments of State, Commerce and Defense in Washington and the U.S. negotiating team was able to go into the Cocom meeting with a unified position. However, no significant agreement was reached with the allies and a new session on the computer issue was set for early May.²

The December dispute within the negotiating team signalled an apparent breach among these executive branch agencies responsible for Cocom negotiations. It followed by only 3 months the abrupt retirement in protest of chief negotiator William Root. Ambassador Katz's intervention was seen as mounting evidence that the United States Government was nearly incapable of reaching a consensus on the computer issue. In his testimony before the subcommittee, Ambassador Katz referred to the December incident as "a replay of the Perils of Pauline."

Ambassador Katz Reported To Washington On Progress And Setbacks In American Negotiating Process To Cocom

OECD Ambassador Katz, whose firsthand experience with Cocom covered two decades, chose the occasion of the December meeting to report In January 1984 to Washington on the strengths and weaknesses of the process U.S. officials used to construct and put forward American export control negotiating positions in Paris. Katz made his report in a cable that was classified secret. The subcommittee minority staff obtained a copy of the cable. Because of the secret classification, the details of its contents were not revealed publicly. But in an executive session of the subcommittee, Katz discusses his report. On the thoughts he conveyed to Washington, Ambassador Katz commented in public session that—

I have urged Washington to do what it should be doing. That is develop negotiating positions before coming to negotiations.

² Progress has been made in reaching agreement in Cocom on the computer issue since the subcommittee hearings ended. William Schneider, Jr., Under Secretary of State for Security Assistance, Science and Technology, advised the subcommittee in a letter of July 20, 1984, that "the United States and its Cocom partners have reached agreement on a new computer definition as part of the recently concluded list review. The agreement was concluded on July 12, 1984 and provides for new definitions for computer hardware, software and telecommunications switching equipment." Schneider went on to say that "the U.S. side did carry out the negotiations in May and July with a unified and reasonably interagency-agreed position on the numerous complex issues under discussion."

Following the executive session, the subcommittee resumed its public hearing and Senator Rudman summarized Ambassador Katz's main points: First, that whatever problems that existed in the American negotiating process for Cocom were largely institutional; they have existed for several years and were not unique to the Reagan Administration; second, that "through the persistent efforts of the President and the administration" the "trend" toward ineffective Cocom negotiations "had been reversed"; and third, that disputes between the agencies developing the American negotiating position at Cocom could be reconciled by the State Department exercising its authority as chief of the delegation. Senator Rudman stressed the view of Ambassador Katz that interagency disputes were not necessarily bad—"stress within the system," the Senator said, can have a healthy result.

Senator Nunn added that Ambassador Katz had also pointed out that as recently as January of 1984 the lack of effective coordination within the American Cocom negotiating team had sunk to an all-time low. Senator Nunn paraphrased Ambassador Katz as having said the "interagency process in this technology area had never been so bad." For himself, Senator Nunn went on to say:

So I think that has to be the starting point, and had everything been smooth (last January) we wouldn't be sitting here today and having these hearings.

Olmer, Schneider, Perle Said Most Problems That Existed At December 1983 Cocom Meeting Had Been Solved

Senior government officers testifying for the administration said they were confident that agreement on the computer issue could be reached in a few days and that new interagency disputes would not arise to preclude success at the Cocom talks in Paris. Lionel Olmer, Under Secretary of Commerce for Trade, testified that the government had a new deadline—April 23, 1984—to reach a unified position on the computer item for the Cocom meeting the first week in May. Referring to the December meeting as that "unfortunate incident," Olmer said he was optimistic that a "well thought out (and) documented presentation" will be put toward in unified fashion by U.S. negotiators in May.

William Schneider, Under Secretary of State for Security Assistance, Science and Technology, said the computer negotiations at Cocom were "notably more complex" than any other item on the organization's agenda. The situation now, said Schneider, "is significantly improved."

However, Richard Perle, Assistant Secretary of Defense for International Security Policy, while voicing optimism about the May talks, did say that the differences among the Cocom negotiating team were over substance "as well as process." Perle said a basic conflict at Cocom had to do with the necessity of convincing the West Europeans and the Japanese that small computers have military applications that the Soviet Union can exploit, thereby threatening U.S. national security. Perle explained:

We worry about this situation a lot more than some of our European allies do, in part because some of our allies

are simply unaware of the use to which small computers can be put.

Pentagon Displayed Small Computers To Show Their Use In Nuclear Target Exercises By U.S. Army In Europe

To demonstrate the strategic uses to which small computers can be put, Perle displayed in the hearing room a slightly modified off-the-shelf Apple II computer and two other small computer devices linked together in a configuration which, when calling upon software designed by the Defense Nuclear Agency, is used extensively by the U.S. Army and NATO to target nuclear weapons in Western Europe. Perle said the Apple II configuration revealed the fact that the Soviet Union can use small computers for vital military applications. The equipment, readily available in computer stores throughout the Washington, D.C. area, cost about \$25,000 and is "an enormously valuable tool netted with other such computers on the battle field," said Perle, who went on to say:

We are seeking to control the ease with which computers of this type are made available to the Soviet Union. Now we know very well that it is always going to be possible to buy computers in ones and two(s) and threes from commercial outlets and that we cannot put a hermetic seal around the Soviet Union and its allies. It is impractical and it won't work. What we think we can do in concert with our allies is reach agreement that these are not imported into the Soviet Union by the thousands and in particular so they are not imported into the Soviet Union tailor-made for the specific military purposes that we think they can usefully serve.

So between those who would argue that the problem is unsolvable because computers are commercially available and those who argue that we ought to stop all such trade in computers, there is a middle ground. We are searching together with our allies to achieve that middle ground because the military consequences of failing to do so are inimical to our security.

Differences Of Opinion Between Pentagon And Commerce Were Seen In Spirited Exchange Between Olmer And Perle

As noted, the "middle ground" which Assistant Secretary Perle sought regarding export controls on small computers was not achieved in the policy-level Cocom meetings in December 1983 where sharp disagreements surfaced between the Commerce Department and the Pentagon.

But, according to Commerce's Lionel Olmer, the differences between his agency and Defense in December were largely the result of the severe positions of Perle's International Security Policy officials and the allegedly overly strict controls ISP tried to place on the export of small computers. In fact, Olmer said, had the Pentagon limited its role to that of technical adviser, and agreement with the Cocom allies could have been reached on the computer issue. Olmer made this assertion in response to a question from

Chairman Roth, who asked if there was any evidence that "the internal dispute" between Perle and Defense Under Secretary DeLauer has "adversely affected the overall process."

Omer replied:

I would say that if there were a straight technical judgment made by Mr. DeLauer as regards the Cocom proposal, we probably would have had a proposal and it would have gone forward, yes.

"That is rubbish," Perle replied.

"One man's rubbish is another man's accuracy," said Olmer.

"That's complete rubbish," Perle reiterated, explaining:

The fact is the Department of Defense in its approach to these computer negotiations has represented a Department view.

Characterizing his disagreements with DeLauer as being "99 percent" related to "jurisdictional disputes," Perle said all these problems had been reconciled. Furthermore, just because no agreement on computers had been reached at the Paris talks was not necessarily cause for alarm. Perle explained:

* * * there is nothing unusual about a Cocom meeting that doesn't reach a conclusion. Indeed, for several years previous the computer issue remained unresolved. So it is easy to exaggerate the importance of one meeting. But that really is a worm's eye view of what is a complex negotiating process.

Under Secretary of State Schneider said the DeLauer-Perle dispute had had no deleterious effect on the Cocom process. He explained:

From my perspective in dealing with both munitions licensing cases and the establishment of our positions at Cocom, it has not been affected by this management dispute in the Defense Department. * * * I have to deal with circumstances where there are disputed cases before this event and after it. And it has been no more difficult to resolve the cases before than since. From my perspective and what I have to do, day to day with this process, it would take a more sensitive political seismograph than I have to take note of any change in the process stemming from the adjudication of this dispute within the Department of Defense.

Senator Roth said:

Well, because of the importance of what we are dealing with, I suppose some dispute is not necessarily undesirable. I mean these are awfully tough questions. While the process must work and proceed, and I think it is a serious matter when you go to negotiations and don't have a position; at the same time I think if there are those who feel very strongly there ought to be the opportunity to make their voices felt.

Senator Nunn, Assistant Secretary Perle Discussed Concerns That
DOD Technical Judgments Will Be Submerged by Ideology

Senator Nunn repeated his assertion that the intent of Congress in including section 10(g) in the Export Administration Act of 1979 was to engage the Defense Department in export control matters for DOD's technical expertise. Political and ideological judgment from the Pentagon were not discouraged, Senator Nunn said, but military technical advice was the principal contribution DOD was to make.

But Assistant Secretary Perle, whose Office of International Security Policy had taken primary export control responsibility from the Office of Defense Research and Engineering, did not agree with Senator Nunn's assessment. Perle said DRE, under Richard DeLauer, still made the "narrow" technical evaluations on export questions, but that his ISP Office then made the final decision based on "broader" considerations. Perle explained:

The technical consideration, narrowly construed as technical advice, is handed by Dr. DeLauer's office to my office and that (technical advice) is factored in together with a number of other considerations to produce a judgment.

The "other considerations," Perle said, had to do with "questions of armament cooperation," and security and political facts such as the relationship between the Department of Defense and the country that would receive the export. Senator Nunn said political considerations were more appropriately the domain of the State Department. Perle said, "We don't make the essential political judgment. All we can do is make a recommendation. * * *" Senator Nunn said he was concerned that Perle's office, in making its political or "broader" judgment, would submerge the strictly technical appraisals coming out of DeLauer's DRE office. The result might be that DOD's ultimate position seemed to be based on technical facts when in reality it was a non-technical ingredient that prevailed, said Senator Nunn, who added:

If the technical side gets lost in the Defense Department's political analysis, then in my view we have lost what Congress intended for Defense Department to do.

Perle replied that technical assessments from DRE were not getting lost and that:

I don't think Dick (DeLauer) would argue for a moment that there have been licenses that we have recommended disapproved on political grounds that he would have been happy to approve on technical grounds.

Senator Nunn asked Commerce's Lionel Olmer to comment. Olmer said the "central concern" of the business community was the belief that political judgments did outweigh technical judgments in the Pentagon. Olmer said some critics of the present system allege that "there is too much policy being introduced in the Defense Department judgments and they are being masqueraded as technical judgment." Olmer said he wasn't certain if that were true but he did point out that the Commerce Department believed it to be "absolutely essential" that export questions be decid-

ed with "Defense Department technical judgments." But, he said, "There have been occasions in which I would say that there has been a blending of policy with the technical judgment."

The question of non-technical persons—lawyers, political scientists, foreign policy specialists—making technical judgments based on ideology for the Pentagon had been raised earlier in the hearings by former VHSIC program director Lawrence Sumney, now in private industry. Sumney had alleged that the dominance of non-technical ISP personnel in export controls had created a climate in the business community wherein industry spokesmen refused to speak out against DOD policy because they feared Pentagon reprisals. When Senator Nunn asked Perle about Sumney's charge that ISP officials had no training to make technical judgments and that "they argue from an ideology," Perle replied that such an allegation was "rubbish."

Under further questioning, Perle said that no one in ISP's senior management level had technical training. Perle was trained in international affairs. Dr. Stephen Bryen's doctorate was in political science. Donald Goldstein was from the intelligence community. The following discussion then ensued:

Senator NUNN: Do you have anybody that has an engineering, physics, or technical background at the top of your shop, in a top rung of management?

PERLE: No. But these are not technical decisions made at that level. Nowhere in the government are they. Nowhere in the government.

Senator NUNN: Well, that may be true, but I know what my intention was when I wanted the Department of Defense to get vitally involved in this. My intention was not to get political judgments but rather to get technical judgments and strategic judgments and policy judgments. I realize it is a thin line here. I recognize that. I want to know what Richard Perle thinks about the policy of technology transfer. I think that is valuable. But I don't want that to become so intertwined with the technical side of the Defense Department's input that one can't distinguish between your opinion and Dick Delauer's.

PERLE: No, I don't think you would have any problem distinguishing between mine and Dick's (DeLauer's) and I can't think of an issue on which Dick and I disagree. The misconception here is the management of the process which involves a very large number of people. The managers are not themselves technicians any more than the managers of any of our top technical firms are themselves technicians. So the management responsibility is in the hands of people who are skilled by background and experience in pulling together the activity of a large number of people. And I would not put a physicist in that job.

Senator Nunn asked Perle why he had retained the services of a consulting firm to provide technical advice on export matters when Defense Research and Engineering was set up in the Pentagon to provide precisely that kind of advice. "Why do you have consultants for your own side?" Senator Nunn asked. Perle replied:

Because there are broader policy issues than the judgment of the technician on a specific chip. The interesting questions are seldom the narrow technical issues. There is seldom dispute on the narrow technical issues. Indeed, if you press me, I don't think I could give you a single instance now of a significant technical dispute.

TWO SCIENTISTS POINTED TO WEAKNESSES IN ABILITY OF U.S. TO ACHIEVE EFFECTIVE EXPORT CONTROLS

Dr Alfred Brenner, a physicist and computer scientist at the Fermi National Accelerator Laboratory near Chicago, has provided technical advice to Federal authorities as they fashioned positions to take to the Cocom negotiations in Paris. Since 1971, Dr. Brenner has been a technical adviser to the Department of Energy on export controls affecting computers. In that role, he worked in the American Cocom list review process, on evaluation of export license applications on computers and has been a member of the Commerce Department's Technical Advisory Committee (TAC) on computers. He testified that American policymakers frequently decided U.S. positions without having sufficient technical information. This inadequacy was particularly frequent in recent years among Defense Department officials, Dr. Brenner said.

Senator Rudman asked:

* * * what you are saying is that people who make these policy/value judgments * * * they in many cases don't possess the kind of technical knowledge and expertise to make them in a forthright way. You are saying that?

"That is correct," Dr. Brenner said. He went on to say that the Pentagon did not assign highly competent technical personnel to the meetings where technical considerations were evaluated. Dr. Brenner said one result of the lack of competent technical involvement in export control decisionmaking was that overly strict regulations were imposed, regulations that were, in his opinion, unrealistic and could not be enforced. Dr. Brenner said the Defense Department, whose responsibility was national security, had an essential role to play in export controls. But DOD's role had been allowed to dominate all other considerations. Dr Brenner said DOD was trying to control too many items. Consequently, he said, "there is leakage all over the place" and controls tend to be violated across the board. A more realistic approach, he said, would be to control only the most strategic technologies. Then "you will do a much more effective job," he said, adding:

I believe if one is more relaxed on where one sets the limit, one would be able to focus its attention on the more important things.

Dr. Brenner said that if the Federal Government persisted in trying to impose overly strict controls on American technology, U.S. technical preeminence will decline. He said American industry was far better equipped and motivated to protect its own proprietary information than the Government was.

Brenner said a major obstacle preventing the Soviet Union and its allies from achieving technological pre-eminence was the fact

that Communist governments suppress the flow of information among scientists, engineers and managers. Broad controls on technology in the U.S. could have the same stifling effect in America, Dr. Brenner said. He explained:

I do believe that if we are overzealous in the protection over the leakage of technology that we will stifle the one mechanism by which we have become so technologically powerful.

Senator Roth asked Commerce Undersecretary Olmer to comment on Dr. Brenner's point that unnecessary export controls can have a chilling effect on the growth of American technology. Olmer said he did not think export controls had slowed down technological progress but he went on to say that some business spokesmen and the President's Export Council felt that "these kinds of severe (export) restraints will inhibit their ability to make sales around the world and that they will lose market share." However, Olmer said, these critics of export controls have been unable to prove their contention an "it is our position, most firmly, that that will not be the case."

Assistant Defense Secretary Perle had this to say on the question:

I was glad to hear Lionel (Olmer) say that he doesn't believe the case has been made that whatever problems our high tech industries are encountering can be attributed to the controls we place on the export of high technology to the Soviet Union and its allies. It is a trivial percentage of the total volume of business and a price that we think we ought to be prepared to pay in the interests of national security.

For the sake of the lost business, it would not be wise in our judgment to permit that technology to flow to the Soviet Union. There undoubtedly are encumbrances of a bureaucratic nature that result on the licensing process that have some intangible effect. But I really don't believe that the heart of the problems our high tech industries are encountering can be associated with the system of export controls.

Another scientist—Dr. Lara Baker, a computer scientist at the Los Alamos National Laboratory in New Mexico—testified concerning his participation in the process whereby the U.S. Government drafted policy for Cocom negotiations. Dr. Baker was chairman of the Technical Task Group (TTG) for the computer item in the development of the U.S. position on computers which was negotiated at the list review at Cocom in 1982. He was an adviser to the U.S. Cocom negotiating team in Paris in the fall of 1982. He also served as the lead technical adviser at the Cocom working group which met in Paris in April and May of 1983.

Dr. Baker said that, in his opinion, the U.S. position at Cocom would be strengthened if negotiators put forward views based on sound technical factors—not ideology.

IV. VIEW FROM TECHNOLOGY EXPORTING COMMUNITY

INDUSTRY COALITION URGED IMPROVED FOREIGN AVAILABILITY DETERMINATIONS, INCREASED EXPORT CONTROL ROLE BY BUSINESS

In its November 1982 report on the technology transfer inquiry, the investigations subcommittee urged government officials to improve foreign availability determinations. It is unfair to American business, the subcommittee said, for Government to deny U.S. exporters the opportunity to sell a given high technology product overseas when foreign countries are offering a nearly identical item in world markets. The subcommittee said the business community has a right to expect that, wherever appropriate, it should be entitled to compete on equal terms with foreign businesses. "Export control decisions should be made with a view to allowing as much free trade as possible," the subcommittee report said, adding that the Commerce Department, which has responsibility for foreign availability determinations, should make every effort to improve its ability to insure that American industry is not being precluded from exporting equipment which already is being sold abroad.

Unfortunately, according to the Industry Coalition on Technology Transfer, foreign availability determinations are not any more fair or accurate in 1984 than they were in 1982. In fact, according to the testimony of Industry Coalition spokesman W. Clark McFadden II, "No subject has been more frustrating to U.S. high technology than foreign availability."

The Industry Coalition, whose 3,000 member firms employ 4 million workers and have worldwide sales of more than \$250 billion, would like the Commerce Department and other Federal agencies involved in export controls to allow for more participation by American businesses in foreign availability determinations. McFadden told the subcommittee that:

Adequately adjusting for foreign availability could probably do more to simplify and rationalize existing U.S. export regulations than any other single issue.

McFadden urged the subcommittee to demand of the executive branch an export control system that is cognizant of the great economic benefits this nation enjoys from its high technology exports. He said U.S. high technology firms export about 30 percent of their production compared to 8 percent for American manufacturers generally. High technology exports comprise nearly half of the exports from the U.S. manufacturing sector, McFadden said. He went on to say:

The positive balance of trade contribution in the high technology sector continues to grow. Productivity in the high technology sector is increasing at a rate six times faster than U.S. business in general; and the inflation rate in the high technology sector during the 1970's was only one-third of the national average. * * * the majority of our Nation's research and development is conducted by high technology industry. This technological innovation has preserved the U.S. qualitative edge in weapons systems.

Indeed, the U.S. high technology industry supplies over two-thirds of all Defense hardware purchase for our military services.

The economic advantages the U.S. has due to its high technology industry are threatened when Government tries to impose overly strict export controls, said McFadden, who explained that the Industry Coalition fully supports regulations aimed at preventing the Soviets and other potential adversaries from acquiring key strategic technologies and products. But, he warned, recent actions and proposals coming out of Washington indicate to the Industry Coalition that new and sweeping and unnecessarily severe regulations are about to be applied. If these new controls are put in place, he said, their impact "could be very dramatic and substantial."

Stressing his view that industry is not primarily concerned with regulations affecting the relatively small amount of trade with the Soviet Union and Soviet Bloc, he warned about the reputed oppressive impact the proposed new controls will have on trade with the Free World. Present and projected controls on selling high technology to America's major trading partners "put us at a competitive disadvantage," McFadden said, yet industry believes the regulations can be "designed, streamlined and improved in a way that we can live with." But, he warned:

We are concerned that the direction of a lot of new regulatory initiatives is not going to allow us to do that. That is why we formed this Coalition (4 months ago) and that is why we are here.

McFadden said Government should try harder to involve and utilize industry in the export control process. Government indifference, he said, is one of the frustrating developments that frequently faces businesses which assign highly competent technical employees to give their time to Federal agencies. All too often, he said, the business point of view is offered but ignored by Federal officials. McFadden said:

The difficulty of frustration * * * comes from participating for a long time and not having anyone pay attention to your advice. People don't want to come down and spend 2 days in Washington every 6 months for no apparent impact.

A related point was made by H. B. Lyon, a scientist with Texas Instruments who testified with McFadden. Lyon, who served for many years as a Federal official in export control programs, spoke for himself and not necessarily for Texas Instruments. He said that for Government to devise a more effective export control policy it needed competent personnel whose knowledge and experience could be maintained continuously through an "institutional memory." Instead, he said, a sense of continuity in technology transfer problem-solving did not exist in the executive branch. This had resulted in a situation in which Government does not learn from past mistakes and successes. A decisionmaking environment is created that has no "criteria, guidelines or rules" to assist export officials in their work.

A solution to the "institutional memory" problem is to have industry participate in a more substantive way in technology transfer issues, Lyon said. He said the Government cannot simply order businesses to assign highly competent technical personnel to get involved but that industry itself would have "to consciously work with the Government to find a mechanism" to bring the exporting community into the regulation-setting process.

V. FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

Information developed during 4 days of hearings on technology transfer has led the investigations subcommittee to conclude that:

1. The United States should continue its efforts to reduce the number of controlled products and technologies to only those which the Soviets want and need most. This can be achieved by improved intelligence and a more effective enforcement function.

2. The National Security Council should mediate inter-agency disputes over export controls by expanding its current role in the process by which export controls are established.

3. The Defense Department should fully utilize its own technical assessment capabilities and avoid unnecessary and costly reliance upon outside consultants.

4. The Defense Department should make certain that its technical assessments on export control questions are allowed to stand alone and be clearly distinguishable from DOD political and ideological judgment.

5. The State Department should oversee export control negotiations between the United States and foreign nations.

6. The views of private industry, which develops most of the militarily useful high technology, must be heard and accorded appropriate consideration in the inter-agency process which develops export control policies.

7. The Commerce Department and the Customs Service continue to let bureaucratic jealousies and "turf battles" interfere with their joint responsibility to enforce export controls. While Commerce should retain the important licensing function, the enforcement responsibility should be transferred to Customs.

Introduction

Two years have passed since the investigations subcommittee last examined the technology transfer issue. Two years have also passed since the Central Intelligence Agency made its first comprehensive evaluation of the extent to which the Soviet Union has relied on and benefited from Western technology to build up its military prowess. The investigations subcommittee and the CIA both found that the Soviet drive to acquire Western know-how was massive, well organized, carefully executed and, for the most part, successful.

The CIA report, given first in classified form to the Senate Intelligence Committee and then declassified and inserted in this subcommittee's hearing record, said that stopping the Soviets' extensive acquisition of militarily useful high technology was a chal-

lenge this Nation was obliged to face up to. Soviet raids on U.S. technology were a threat to national security. Stressing the importance of using techniques that were sensitive to the fact that this is an open and free society, the CIA report recommended that Americans approach this problem with a sense of urgency. Soviet acquisition of Western technology, the CIA said, is "one of the most complex and urgent issues facing the Free World today."

This subcommittee, as noted in its 1982 report, shared with the CIA that concern. The subcommittee continues to share that concern. Indeed, there should and must be a sense of urgency with which the U.S. addresses technology transfer questions. Priceless U.S. technology already has found its way to Moscow. Advanced microelectronics, laser, radar, and precision manufacturing technologies have been obtained by the Soviets and have enabled them to make giant strides in military strength with a reduction of risk, investment and commitment of resources. The following remarks from the subcommittee's 1982 report are as true today as they were two years ago:

The military buildup in the Soviet Union is going forward at a rapid pace. Consumer needs take a back seat to armaments. As one former Soviet engineer told the subcommittee, the Soviet industrial capacity is so overburdened with military production that the Soviets could not make a civilian or commercial application of certain high technology products even if they wanted to. It is hoped—for the sake of the Soviet people, for the sake of world peace—that the Soviet military buildup will subside. In the meantime, however, there is no reason why the West should contribute, by weak export controls, to the Soviet Union's technological needs.

The subcommittee, in April 1984 hearings, examined these issues—first, the importance of technology in the Nation's economy and military preparedness; second, the role of the Defense Department in the shaping and implementing of American policy at Cocom, the Coordinating Committee of Japan and the NATO nations, except Spain and Iceland, which meeting in Paris sets controls on the export of strategic materials to the Soviet Union and other Communist nations; and third, the effectiveness and efficiency of enforcement of export controls under the Export Administration Act.

1. Improved Intelligence On Soviet Goals Can Assist U.S. In Determining Extent of Export Controls

All witnesses before the subcommittee stressed the importance of this Nation's high technology to the U.S. economy and its ability to defend itself militarily. Industry spokesmen stressed the central role high technology firms play in emerging world markets. Sales of technologically advanced goods are a major resource for the U.S. as it seeks a positive balance of trade. On the other hand, U.S. national security is largely dependent on its technological preeminence. As pointed out by Richard N. Perle, the Assistant Secretary of Defense for International Security Policy, the U.S. is able to maintain a strong military position because of the technological ad-

vantages it enjoys over potential adversaries. To lose that edge by permitting unrestricted trade in those technologies is to dangerously erode America's defense strength.

Export control policy should, therefore, maintain control over technologies and products that would militarily benefit unfriendly nations while maintaining the relative freedom of scientists, engineers and businesses to develop and market products in an unfettered environment. Too much government involvement in technology sales based on security considerations might result in discouraging investment in and production of the very items we need to maintain our superior position. As Chairman Roth pointed out, "If you look at it strictly from a security point of view . . . if you make a mistake there, you can endanger our security. At the same time, if you become overly protective . . . we can delay or prevent our continuing to be on the technological edge."

A similar view was given by Dr. Richard D. DeLauer, the Under Secretary of Defense for Research and Engineering, who, while stressing strong and effective export controls to thwart Soviet advances based on stolen technology, cautioned that, "To lock it (technology) away for the purposes of protecting it is, I think, counterproductive. It will slowly disappear. When you open the safe some years later, you will find it is no longer there, it is dust, and as a consequence you kept it from being utilized in the most optimum fashion."

It is important, then, that government should encourage American technological achievement by enhancing rather than hindering an environment conducive to innovation. When constraints on exports must be imposed because of national security, those constraints should be well defined and carefully considered.

Unfortunately, government export controls do not always appear to be well defined. For example, industry witnesses testified that the Militarily Critical Technologies List is a huge encyclopedic appendix of exportation guidelines that many critics say is too long. Due to national security considerations, it is classified secret. Many exporters, therefore, are not even sure what is on it.

An enhanced intelligence function would help improve government's ability to determine clear and reasonable limits for export controls. The subcommittee, as it did in its 1982 report, recommends that continued emphasis be placed on intelligence collections that result in our being able to focus more specifically on the export controls and enforcement tools necessary to block Soviet acquisition of products they most urgently want. The achievements made since 1982 are encouraging and deserve recognition. The Central Intelligence Agency has created a high level Technology Transfer Intelligence Committee to serve as a focal point within the intelligence community on all technology transfer issues. Further, the CIA is sharing its expertise in other forums, such as the Administration's Senior Interagency Group on Technology Transfer, where it participates fully. In addition to the CIA, the Defense Intelligence Agency has established a foreign availability section within its technology transfer group. This important development answers a long-standing complaint by industry that government has paid little attention to the availability of like products from foreign producers when setting controls on U.S. exporters. The DIA

computerized data base on foreign availability will also provide up-to-date assessments on the abilities of the technically significant countries to develop, produce, and utilize the technologies of the Militarily Critical Technologies List.

The U.S. system of export controls can be improved by reducing controls where possible and focusing on those technologies and products which have strategic significance and which the Soviets want and need most. Improved intelligence on Soviet objectives will help U.S. policymakers decide which technologies and products to control and which to decontrol. That was the first finding the subcommittee reached in 1982. That is the principal conclusion from the round of hearings last April.

2. National Security Council Can Mediate Disputes By Assuming Assertive Role In Export Controls

Even if the U.S. system of export controls were operating at optimum levels of efficiency, American objectives in the technology transfer field might not be realized. That is because the U.S. is not the only supplier of militarily useful high technology in the world. As a matter of fact, more and more of the world market share of high technology sales is being carved out by other nations. The National Science Foundation has estimated that the U.S. share of high technology sales had declined from 75 percent to 50 percent and that by the end of this decade the level will have dropped to 30 percent. This does not mean the U.S. will sell less high technology—but that other nations will be making inroads with their own high technology industries. If the U.S. is to succeed in keeping certain key militarily useful technologies out of the hands of Communist adversaries like the Soviet Union, American efforts must be coordinated with other major suppliers. That is why the Cocom organization is so vital to U.S. interests. Without the cooperation of the NATO allies and Japan, the U.S. cannot hope to prevent undesired technology transfers from occurring.

The subcommittee sought to evaluate the effectiveness and efficiency of the executive branch in preparing and putting forward American negotiating positions at Cocom talks in Paris. In its examination of the Cocom process as carried out by the Departments of State, Commerce, Defense, and Energy, the subcommittee found instances of uncertainty, delay, recalcitrance, mistrust and a lack of interagency cooperation. A major source of difficulty in the Cocom process was the strong disagreement between the Commerce Department and the Pentagon in some areas of export policy.

The disputes between the two Departments were especially apparent in the 5-year effort to reach a consensus within the executive branch over what American policy should be at Cocom on the export of computers. In general terms, the Defense Department wanted a negotiating position that called for tight controls on the export of computers, including the so-called low performance or personal computers. The Commerce Department believed the DOD position was overly strict and would not be accepted by the other Cocom members. As a result, no unified position was reached.

The subcommittee believes a mechanism must be established to mediate sharp differences within the executive branch on crucial strategic export control issues such as those seen in the computer

deliberations. It should be noted that the disagreements over the computer position at Cocom were not unique. Sharp and potentially disruptive disputes have occurred in other areas of export controls such as the export license review process and in the decontrolling of items on export control lists. The computer disagreements happened to be a timely subject to cover at the hearings because interagency conflicts had prevented a unified American position being put forward at one meeting. The question should not be, who was responsible for the failure to reach a unified position on this computer issue? Rather, the more appropriate question should be, how can the government resolve similar deeply felt disputes in the future?

On this point, there is a viable solution. The subcommittee endorses the administration's use of the National Security Council system in this process and believes that the role of the NSC should be expanded to act as the third-party mediator in all significant export control disputes as they occur throughout the interagency process. As the U.S. position is hammered out in interagency conferences and meetings with private industry, the National Security Council should monitor developments. It should remain in close consultation with the Department of State, which is properly designated as head of the American delegation to Cocom. The State Department officials involved in the Cocom process will know in ample time that potentially debilitating disagreements loom ahead. The NSC should be alerted and brought in to mediate. The subcommittee also believes that it is critical for the NSC element designated to mediate such disputes to include, by special appointment if need be, a representative of appropriate seniority from the Department of Commerce. In this manner, the disagreements can be settled without having to invoke Section 10(g) of the Export Administration Act.

Ten (g) requires that anytime the President of the United States overrules the Pentagon on an export matter, the President must make an accounting of his action to Congress. Critics of 10(g) testified that politically sensitive senior government officers do not want to force the President to have to decide to overrule the Pentagon and thereby be required to report to Congress. The exercise might be seen as reflective of disarray within the administration. The result, critics said, is that the Pentagon view virtually always prevails because no loyal supporter of the President wants to embarrass him by triggering the 10(g) mechanism. Therefore, 10(g)'s detractors said, the Department of Defense has a kind of veto in export controls.

The Subcommittee believes there are valuable checks and balances that flow from the presence of the 10(g) provision. The most important benefit of 10(g) is that it does insure that the Congress be advised if Presidential intervention is required. However, most disagreements should be able to be reconciled without going to the President. That is the advantage of using the NSC as mediator. It is a procedurally sound alternative to invoking 10(g). Participation by the NSC will provide a vehicle for reconciliation and leave 10(g) in place for those extraordinary occasions when only the President can decide. But, procedurally, there should be a third-party mediator who can bring appropriate pressure to bear on the disputants

and whose concern for and knowledge of national security considerations are beyond reproach. The NSC, with Commerce Department representation, should waste no time in involving itself in export control problems in a much more significant way than it has in recent years.

Section 4(e) of the Export Administration Act says that only government officers who are confirmed by the Senate may act on behalf of the President in carrying out the terms of the statute. For that reason, the National Security Council, whose head is the Assistant to the President for National Security Affairs and who is not confirmed by the Senate, cannot compel agreement. But the NSC can play a leading role in the mediation process whereby a settlement is reached. In those instances where such mediation fails, then the dispute is required to go to the President, which is appropriate. Disagreements of that intensity ought to go to the President. But under no circumstances should the Secretaries of Commerce or State acquiesce to the Pentagon simply because they are afraid to trouble the President. It was the intent of Congress that the President be troubled whenever his Cabinet cannot decide something important. In addition, the exercise of the 10(g) rule will have the beneficial result of informing the President on the size, force, implications and details of deeply felt debate within his administration on the subject of export controls.

3. DOD Should Utilize Existing Technical Expertise

The subcommittee also recommends that the Secretary of Defense review the Defense Department's in-house capability to make technical assessments of Cocom proposals, export licensing matters, and related export control issues. Many Members of Congress have assumed that DOD and its components have sufficient human resources to call upon when technical judgments are to be made on export issues. But this may have been an incorrect assumption, particularly in light of information developed during the subcommittee's inquiry indicating that both the Office of Research and Engineering and the Office of International Security Policy—the key players in the Pentagon's export control policy system—use outside consultant firms to assist them in making technical judgments. At the hearings, for example, there was discussion by Senator Nunn and Assistant Secretary Perle about the wisdom of having the ISP Office retain outside consultants for technical assessments when the technical assessment function has been assigned to DRE by DOD Directive 2040.2. This question was also raised by Dr. Delauer in a late 1983 memorandum to Mr. Perle wherein he reportedly accused Mr. Perle and his subordinates of using contract technical advisers to support policy views on switching computers and microelectronics even though technical advice had already been provided by DRE.

Information at the hearings also indicated that at certain points in the Cocom process the best trained technical experts did not come from the Defense Department but were provided by the Energy Department. In the review which the subcommittee recommends that the Secretary of Defense make, examiners should locate accomplished technical experts in DOD and its component services and then seek to devise a system whereby their skills may

be utilized to such tasks as export licensing determinations and the technical evaluations essential to the Cocom process. It is not inherently wrong for the Pentagon to use outside consultants in certain aspects of the export control system. However, the use of such resources should be restricted in favor of using and strengthening the Pentagon's own technical capabilities.

4. The Department of Defense Should Insure That Its Technical Assessments On Export Control Questions Are Sound And Readily Discernable From Less Tangible Questions Involving Political and Ideological Judgments

The subcommittee believes that the DOD role in export control analysis should be primarily one of supplying the technical assessments necessary to determine the potential military effect of permitting the transfer of critical items of technology. Given this, the technical assessment of DOD should be clearly defined in any final DOD decision. This will enable the Pentagon's technical experts to maintain their independence and ensure the integrity of the technical judgment itself.

Hearing testimony raised some doubt as to whether this has been successfully done in the past. Commerce Under Secretary Olmer said there was a perception in industry that the Pentagon was masquerading ideological and political judgments on export controls as if they were technical. Lawrence Sumney, the former director of the Pentagon's Very High Speed Integrated Circuit program, testified that DOD's Office of International Security Policy (ISP), which has the final say in technology transfer issues, is not technically qualified to make export control judgments because its personnel are lawyers, economists and political scientists—not scientists and engineers. Because of this lack of technical expertise, Sumney said, "They argue from an ideology." Olmer also testified that a unified American Cocom position on computers could have been achieved months ago had the Pentagon position reflected the views of the scientific and technically-oriented component of DOD, the Office of Defense Research and Engineering. Assistant Secretary Perle disagreed, saying that the computer position that he and his subordinates presented was a Department-wide position that fairly reflected the technical concerns of Research and Engineering as well as the security interests of his own office of International Security and Policy. Perle also emphasized that the fact that neither he nor his top aides were scientists does not mean they are unable to manage DOD tech transfer programs. "These are not technical decisions made at that level," Perle said. "The managers are not themselves technicians any more than the manager of any of our top technical firms are themselves technicians," he said.

To avoid this type of dispute, there must be a clear audit trail as to the Defense Department's technical assessment separate and apart from the final Pentagon judgment. The purely technical assessment should be made available to the Departments of State and Commerce, the National Security Council and the President, if necessary, so that they may take it into account in their own judgments.

This is not to say that the Defense Department should be precluded from injecting any policy considerations into its overall

export control recommendations. Indeed, in its 1982 report, the subcommittee commended the Defense Department for encouraging other nations to involve their defense ministers in the setting of export policy. The subcommittee recognizes, as it did in its 1982 report, that, inevitably, the writing of export "policy" involves the assimilation of a wide variety of information and opinion, including non-technical judgments from Defense as well as the other agencies involved. However, the development of a sound export policy requires decision makers to have at their disposal the final purely technical analysis of the experts.

5. The State Department Should Oversee Export Control Negotiations Between The United States And Foreign Nations

In addition to endorsing the proposal that the NSC serve as mediator in serious disputes over export control questions, the subcommittee recommends that the Department of State take a more active role in coordinating export control negotiations with our Cocom partners. Section 5(k) of the Export Administration Act assigns to the State Department responsibility for conducting negotiations with other countries regarding their cooperation in restricting the export of certain goods and technologies. This is to be accomplished following coordination with the Departments of Defense and Commerce.

As the executive branch agency with responsibility for international negotiations, the State Department should ensure that coordinated positions are worked out among the various other agencies involved in shaping U.S. export policy. It should be involved in every step of the process, exercising a brand of leadership that is neither passive nor strictly procedural. The State Department should insure that interagency differences are recognized early and should not hesitate to require that serious disputes are brought to the appropriate levels of authority for resolution.

In order that confusing signals are not sent to the allies, the Department should be fully aware of any discussions regarding export control issues between U.S. agencies and foreign government representatives. The Department should be actively involved in planning for all such discussions. Except in rare instances, State Department representatives should participate in those discussions. Given its clear statutory responsibilities, the Department cannot become merely a spectator while important policy decisions are being reached first within the U.S. government and later with the allies.

6. The Views Of Private Industry, Which Develops Most Of The Militarily Useful High Technology, Should Continue To Be Heard And Accorded Appropriate Consideration As Export Control Policies Are Developed

In its November 1982 report, the subcommittee noted that from a security standpoint government and industry must work together to safeguard our high technology from illegal diversion. It is equally important for government and industry to cooperate and exchange views on the process that leads to other export administration considerations, such as setting controls on U.S. manufactured commodities. There are too many controlled items produced in the

U.S.—and too few government agents to track them—for Federal agencies to try to approach the problem on their own.

Presently, there are some forums through which industry speaks to government regarding export policy. Among them is the President's Export Council, whose Subcommittee on Export Administration has been led by chief executive officers of leading U.S. corporations. That body provides valuable input to the Department of Commerce. Likewise, the Department of Defense has both formal and informal advisory groups through which private sector views are presented for consideration by Department policymakers. However, those views may or may not be brought before interagency groups discussing important export issues. It is at that level that industry believes it can make its greatest contribution. Despite that fact, they must now depend on one or another Government department to carry their views to that forum.

To insure full consideration of those views, industry should send technically competent, senior officers to those government meetings—known as Technical Advisory Committee sessions, or TACs—where the Cocom negotiating process is begun. It is at this step where the foundations for the ultimate U.S. Cocom negotiating position are set. If industry makes its views felt here, and if government tries in good faith to accommodate those views, it is likely that business's concerns will be heard as the process continues. Industry should be clearly represented and its opinions accorded proper weight.

There are, of course, limits on the extent to which private industry can participate in setting U.S. foreign policy, or establishing our negotiating position at Cocom. The Commerce and Defense Departments agree on this. But the executive branch should not deny itself the opportunity to receive and consider the view of industry where possible in interagency discussions.

7. Commerce, Customs "Turf" Battles Continue; Customs Should Have Total Enforcement Duty

The unhealthy competition between Commerce Department and Customs Service agents apparently has not ended. Documented in detail by the Minority staff of this subcommittee in 1982 hearings, bureaucratic disputes between the two agencies were found to impede effective enforcement. Evidence revealed at the 1984 hearings indicated that the problem has not been resolved completely.

But that is not to say no progress had been made. On January 16, 1984 a Memorandum of Understanding between Customs and Commerce was signed which sets guidelines on division of responsibilities for the agencies' enforcement of the Export Administration Act. In addition, the Commerce Department has dedicated more resources to enforcement, increasing the number of investigators five-fold over the level existing in 1982, and adding 19 analysts to its intelligence office. For these reasons, the chairman personally reserves judgment on the recommendation that the Commerce Department be removed from the export enforcement function. For its part, the Customs Service has continued to make illegal diversions a prime target. Through its Operation Exodus, a special project to head off illegal exports, it continues making important cases against diverters of U.S. technology.

However, the issue of counterproductive interagency competition and lack of cooperation between Customs and Commerce still plague the overall enforcement effort. A September 1983 report by the Commerce Department Office of Inspector General, which was made public at the subcommittee's hearings, indicated that the agencies are not fully cooperating in at least one of three field offices. After studying the operations of the Commerce Department's San Francisco Field Office, the Inspector General's office said:

Coordination and cooperation between (Commerce) and the U.S. Customs Service in the San Francisco area are not good. Immediate aggressive leadership and action are needed from both agencies to improve working relationships and eliminate or minimize the problems arising from the inherent interagency rivalry generated when two agencies have the same mission and overlapping responsibilities. * * *

Increased tensions between the two agencies have been felt most severely at the case and investigative level. Agents from both agencies told members of the (Inspector General's Office) that their work together on joint cases was increasingly more difficult because of mutual distrust, competition for "credit," leads and informants on a case and even arguments over who had custody of seized documents.

Agents from both agencies deliberately avoid working together on export enforcement cases. Commerce agents pursue their leads and cases as independently as possible. * * *

The Inspector General's report concluded:

* * * the (IG inspectors) repeatedly faced the underlying issue of whether two federal agencies can effectively share responsibility and authority for enforcement of export controls. If both agencies did not have the mandate to do so, it is unlikely that the present dual enforcement system would be proposed as the most efficient and effective way to get the job done. There is no apparent reason for both Commerce and Customs to be involved in export enforcement. One agency could do the job just as well or better than two, given the necessary manpower authorities and resources. After witnessing the increasingly strained relations between Customs and (Commerce) agents working the control cases, this conclusion is even more apparent.

Speaking for the Commerce Department, William Archey, Acting Assistant Secretary for Trade Administration, said he has taken steps to assure improved cooperation between his agents and those of Customs. Similarly, John M. Walker, Assistant Secretary of the Treasury for Operations and Enforcement and the senior department officer overseeing Customs, said he had also made investigative cooperation a top priority. Still, the subcommittee finds the IG's revelations discouraging. The national interest requires that jealousies and interagency rivalries be set aside. When that cannot be accomplished, other solutions must be sought.

It is the recommendation of the subcommittee that the Customs Service be assigned exclusive jurisdiction for investigating violations of the Export Administration Act. It possesses far more resources, both in terms of manpower and intelligence capabilities, than does the Commerce Department and has a longstanding network of law enforcement contacts overseas. Even at its present rate of buildup, the Commerce Department cannot begin to match the ability of the Customs Service to police the export of U.S. high technology. To have two entities competing for cases and sharing authority over such an important area is, we believe, bad policy and leads to increased confusion and continuing questions over which agency takes which case. Such an arrangement can only mean less effective enforcement and the continued loss of important technology to potential adversaries.

The subcommittee also points out that the Inspector General's Office in the Commerce Department showed true commitment to its mission in speaking out as candidly as it did in its September 1983 report. This is precisely the kind of independent evaluation that Congress had in mind when it created the Inspector General program in 1978. The report comes at a time when the Commerce Department is trying hard to prove to Congress that it can and should continue to enforce the Export Administration Act. Nevertheless, the IG report fully disclosed facts not necessarily supportive of that position. The Commerce Department is to be commended for the good work of its Inspector General's Office.

The following Senators, who were Members of the Permanent Subcommittee on Investigations at the time of the hearings, have approved this report:

William V. Roth, Jr.	Sam Nunn
Warren B. Rudman	Lawton Chiles
Thad Cochran	John Glenn
William L. Armstrong	Jeff Bingaman
	Carl Levin

Other Senators, who are Members of the Committee on Governmental Affairs, approving this report are:

David Durenberger	Thomas F. Eagleton
-------------------	--------------------

The Members of the Committee on Governmental Affairs, except those who were members of the Senate Permanent Subcommittee on Investigations at the time of the hearings, did not participate in the hearings on which the above report was prepared. Under these circumstances, they have taken no part in the preparation and submission of the report except to authorize its filing as a report made by the subcommittee.

ADDITIONAL VIEWS OF CHAIRMAN ROTH AND VICE CHAIRMAN RUDMAN

We have approved this report, which was originally drafted by the minority staff, for filing as a Subcommittee report. Because of developments since the hearings were held on this matter, and certain very obvious conclusions which can be drawn from the hearings themselves, additional comments are in order.

Of primary interest to anyone who has studied the long litany of excuses and conflict which has purchased the United States effort to control the export of its sophisticated technology is the fact that in May 1984 the United States participated in a very successful meeting of Cocom. This meeting is mentioned in a footnote which may be found in this report. It is clear that, in recent months, substantial progress has been made which, in turn, tends to mute some of the criticism leveled by witnesses who appeared during the course of the earlier hearings. In any event, as every witness appearing before the Subcommittee who was asked confirmed, the inter-agency problems which have existed between the Commerce Department and the U.S. Customs Service on one hand, and the Commerce Department and the Department of Defense on the other go back many, many years. During the course of the hearings, Senator Rudman paid particular emphasis to this fact. Certainly the recommendation contained in this report that the National Security Council be utilized to a greater extent is a solid one. Recent developments such as the Memorandum of Understanding between the Customs Service and the Commerce Department are encouraging, as are indications that disputes between Commerce and the Defense Department will be resolved in a systematic way. Also heartening has been the Department of Defense's dedication of resources to the technology transfer problem. Through good management, Defense has reduced what was for them a backlog of many thousands of export cases to the point where there are barely any overdue.

In summary, Congressional committees all too often highlight the negative rather than give credit to the positive. In this case, much has been done to shore up the United States enforcement apparatus since the Subcommittee's critical 1982 report. For this the effected agency should be congratulated. Additional work is necessary, however, and we are confident that agency heads most involved are moving in the right direction. If they are not, additional hearings will be necessary.

○